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Studies in Reliability Theory and Survival Analysis and in Markov Chain Monte Carlo Methods

AFOSR Grant No. F49620-96-1-0132

Hani Doss, Principal Investigator

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Papers Published

1. Athreya, K.B., Doss, H. and Sethuraman, J. (1996). A Proof of convergence of the Markov chain simulation method. *The Annals of Statistics 24*, 69–100.

2. Doss, H. and MacEachern, S.N. (1997). The Dirichlet process. *Encyclopaedia of Mathematics*, suppl. vol. I, M. Hazewinkel, ed., 224–225, 1997, Kluwer Academic Publishers, Dordrecht.

3. Doss, H., Huffer, F. and Lawson, K. (1997). Bayesian nonparametric estimation via Gibbs sampling for coherent systems with redundancy. *The Annals of Statistics 25*, 1109–1139.

4. Doss, H. and Narasimhan, B. (1998). Dynamic display of changing posterior in Bayesian survival analysis. In *Practical Nonparametric and Semiparametric Bayesian Statistics*, D. Dey, P. Mueller, and D. Sinha, eds., 63–87, Springer-Verlag, New York.

Technical Reports Issued

1. Li, S., Pearl, D.K., and Doss, H. (1996). Phylogenetic tree construction using Markov chain Monte Carlo.

2. Doss, H. and Narasimhan, B. (1998). Dynamic display of changing posterior in Bayesian survival analysis: The software.

Other Activities

I was a member of the Joint Statistical Advisory Group at Stanford University (a group of researchers who study problems posed by the N.S.A.) led by Dr. James Maar of the N.S.A. and Professors David Siegmund and Art Owen of the Statistics Department at Stanford, for each of the three summers in the period under consideration. I

wrote four technical memoranda on problems of interest to some anonymous parties in the D.o.D. and forwarded to us through Dr. Maar.

Invited Talks

1. Fifty-First Meeting of the Seminar on Bayesian Inference in Econometrics and Statistics, Ohio State University, May 1997. *Dynamically varying prior and posterior in Bayesian nonparametric analysis of censored data.*

2. Joint Statistical Meetings, Anaheim, California, August 1997. *Monte Carlo methods for Bayesian analysis of censored data using mixtures of Dirichlet priors.*

3. Michigan State University, Department of Statistics, November 1997. *Bayesian analysis of censored data using mixtures of Dirichlet priors.*

4. ENAR/IMS Spring Meeting, Pittsburgh, Pennsylvania March, 1998. *Reconstruction of phylogenetic trees via Markov chain Monte Carlo.*

5. International Conference in Reliability and Survival Analysis, Northern Illinois University, May 1998. *Dynamic visualization of changing prior and posterior in Bayesian nonparametric analysis of censored data.*

6. Joint Ohio State University, Cleveland Clinic Foundation, Case Western Reserve University Annual Biostatistics Minisymposium, Ohio State University, May 1998. *Dynamic visualization of changing prior and posterior in Bayesian nonparametric analysis of censored data.*